

## PENDING CLAIMS AS AMENDED

Please amend the claims as follows:

Here is a list of the claims as they now stand:

1. – 7. (Canceled)

8. (Previously Presented) A method for estimating a signal to interference-plus-noise ratio (SINR) of a wireless channel, wherein frames having a pilot portion and a non-pilot portion are transmitted over the wireless channel, said method comprising:

adapting an adaptive equalizer using the pilot portion of a frame, resulting in a pilot output;

applying said adaptive equalizer to the non-pilot portion of said frame, resulting in an output;

determining a parameter using said output, wherein said parameter comprises a first parameter;

estimating the SINR of the wireless channel using said parameter, resulting in a non-pilot SINR estimate;

determining a second parameter using said pilot output;

estimating the SINR of the wireless channel using said second parameter, resulting in a pilot SINR estimate;

calculating an SINR compensation factor using said non-pilot SINR estimate and said pilot SINR estimate;

smoothing said SINR compensation factor over a plurality of frames; and

adjusting said pilot SINR estimate according to said smoothed SINR compensation factor.

9. (Original) The method of claim 8, wherein said smoothing comprises:

$$F(n) = \lambda F(n-1) + (1-\lambda) \frac{PilotSINR}{NonpilotSINR}$$

wherein  $F$  represents said smoothed SINR compensation factor, and  $\lambda$  represents a real positive number less than one.

10. (Original) The method of claim 8, wherein said smoothing comprises:

$$F(n) = \frac{\sum_{m=1}^M F(n-m)}{M}$$

wherein  $F$  represents said smoothed SINR compensation factor, and  $M$  represents the number of said plurality of frames.

11. – 20. (Canceled)

21. (Currently Amended) An apparatus for estimating a signal to interference-plus-noise ratio (SINR) of a wireless channel, wherein frames having a pilot portion and a non-pilot portion are received via the wireless channel, said apparatus comprising:

an adaptive equalizer that is adapted using the pilot portion of a frame, and applied to the non-pilot portion of said frame, resulting in an output;

means for determining a parameter using said output; and

means for estimating a SINR of the wireless channel using said parameter ~~The apparatus of claim 20~~, wherein said non-pilot portion comprises a control portion having a plurality of control symbols, wherein the output of said adaptive equalizer during said control portion comprises a soft estimate of said control symbols, and said means for determining comprises:

means for applying a hard decision to said soft estimate, resulting in a hard estimate of said control symbols; and

means for calculating said parameter using said soft estimate and said hard estimate.

22. (Original) The apparatus of claim 21, wherein said parameter comprises a mean squared error (MSE).

23. (Original) The apparatus of claim 21, wherein said parameter comprises a bias.

24. (Currently Amended) An apparatus for estimating a signal to interference-plus-noise ratio (SINR) of a wireless channel, wherein frames having a pilot portion and a non-pilot portion are received via the wireless channel, said apparatus comprising:

an adaptive equalizer that is adapted using the pilot portion of a frame, and applied to the non-pilot portion of said frame, resulting in an output;

means for determining a parameter using said output; and

means for estimating a SINR of the wireless channel using said parameter ~~The apparatus of claim 20~~, wherein said non-pilot portion comprises a data portion having a plurality of encoded data bits, wherein the output of said adaptive equalizer during said data portion comprises a soft estimate of said encoded data bits, wherein said apparatus further comprises a channel decoder configured to decode said soft estimate resulting in a plurality of decoded data bits, and wherein said means for determining comprises:

means for re-encoding said decoded data bits; and

means for calculating said parameter using said soft estimate and said re-encoded data bits.

25. (Original) The apparatus of claim 24, wherein said parameter comprises a mean squared error (MSE).

26. (Original) The apparatus of claim 24, wherein said parameter comprises a bias.

27. (Previously Presented) An apparatus for estimating a signal to interference-plus-noise ratio (SINR) of a wireless channel, wherein frames having a pilot portion and a non-pilot portion are received via the wireless channel, said apparatus comprising:

an adaptive equalizer that is adapted using the pilot portion of a frame, resulting in a pilot output, and applied to the non-pilot portion of said frame, resulting in an output;

means for determining a parameter using said output, wherein said parameter comprises a first parameter;

means for estimating a SINR of the wireless channel using said parameter, wherein said SINR estimate comprises a non-pilot SINR estimate;

means for determining a second parameter using said pilot output;

means for estimating the SINR of the wireless channel using said second parameter, resulting in a pilot SINR estimate;

means for calculating an SINR compensation factor using said non-pilot SINR estimate and said pilot SINR estimate;

means for smoothing said SINR compensation factor over a plurality of frames; and

means for adjusting said pilot SINR estimate according to said smoothed SINR compensation factor.

28. (Original) The apparatus of claim 27, wherein said means for smoothing is configured

$$F(n) = \lambda F(n-1) + (1-\lambda) \frac{PilotSINR}{NonpilotSINR}$$

according to:

wherein  $F$  represents said smoothed SINR compensation factor, and  $\lambda$  represents a real positive number less than one.

29. (Original) The apparatus of claim 27, wherein said means for smoothing is configured

$$F(n) = \frac{\sum_{m=1}^M F(n-m)}{M}$$

according to:

wherein  $F$  represents said smoothed SINR compensation factor, and  $M$  represents the number of said plurality of frames.

30. (Canceled)

31. (Currently Amended) An apparatus for estimating a signal to interference-plus-noise ratio (SINR) of a wireless channel, wherein said apparatus comprises a receiver that receive frames via the wireless channel, said frames having a pilot portion and a non-pilot portion, wherein said receiver includes an adaptive equalizer that is adapted using said pilot portion and applied to said non-pilot portion resulting in an output, wherein said receiver is configured to determine a parameter using said output, and wherein said receiver is further configured to

estimate the SINR of the wireless channel using said parameter ~~The apparatus of claim 30,~~ wherein said non-pilot portion comprises a control portion having a plurality of control symbols, wherein the output of said adaptive equalizer during said control portion comprises a soft estimate of said control symbols, wherein said receiver is configured to apply a hard decision to said soft estimate, resulting in a hard estimate of said control symbols, and wherein said receiver is further configured to calculate said parameter using said soft estimate and said hard estimate.

32. (Original) The apparatus of claim 31, wherein said parameter comprises a mean squared error (MSE).

33. (Original) The apparatus of claim 31, wherein said parameter comprises a bias.

34. (Currently Amended) An apparatus for estimating a signal to interference-plus-noise ratio (SINR) of a wireless channel, wherein said apparatus comprises a receiver that receive frames via the wireless channel, said frames having a pilot portion and a non-pilot portion, wherein said receiver includes an adaptive equalizer that is adapted using said pilot portion and applied to said non-pilot portion resulting in an output, wherein said receiver is configured to determine a parameter using said output, and wherein said receiver is further configured to estimate the SINR of the wireless channel using said parameter ~~The apparatus of claim 30,~~ wherein said non-pilot portion comprises a data portion having a plurality of encoded data bits, wherein the output of said adaptive equalizer during said data portion comprises a soft estimate of said encoded data bits, wherein said receiver further includes a channel decoder configured to decode said soft estimate resulting in a plurality of decoded data bits, wherein said receiver is configured to re-encode said decoded data bits, and wherein said receiver is further configured to calculate said parameter using said soft estimate and said re-encoded data bits.

35. (Original) The apparatus of claim 34, wherein said parameter comprises a mean squared error (MSE).

36. (Original) The apparatus of claim 34, wherein said parameter comprises a bias.

37. (Canceled)